

---

ABSTRACT OF THE DISCLOSURE

Disclosed is a gas sensor for controlling a concentration of oxygen and/or measuring NO<sub>x</sub> by allowing a current to flow through an ion-conductive member for conducting oxygen ion, by the aid of a current supply circuit, wherein the current, which is outputted from the current supply circuit, has a pulse waveform (current signal) having a constant crest value, and the current supply circuit comprises a rectangular wave-generating circuit for controlling a frequency of the current signal on the basis of an electromotive force generated in the ion-conductive member to which the current signal is supplied. Accordingly, it is possible to highly accurately measure the predetermined gas component while scarcely being affected by the electric noise or the like.